December 2007

CE marking of windows and pedestrian doors

Edition December 2007

Guidance Sheet CE.02

EuroWindoor

In cooperation with:

EAA - European Aluminium Association

EPW - European Plastic Window Association

FAECF - Federation of European Window and Curtain Wall Manufacturers' Associations

FEMIB - Federation of the Building Joinery Associations

UEMV - European Glaziers Association

Published by:

EuroWindoor

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1 Introduction

Intention of CE marking

CE marking is a passport for the product for the whole European Economic Area (EEA). It covers all legal requirements addressed by the relevant harmonized technical specification prevailing in all EU Member States.
CE marking replaces any national mandatory marking, e.g. Ü-mark in Germany. No additional requirement can be imposed in national or regional building regulations. National building regulations have to be adapted, if they are contrary to the European rules or insist on national methods.
CE marking sets up a common level playing field by providing manufacturers with:

- Common European test methods and procedures
- Single assessment valid throughout Europe.

CE for windows and doors

With effect from 1st February 2009, window and door manufacturers will be required to apply CE marking. The mark will be applied to finished products and will not extend to installation/erection. CE marking will be MANDATORY and will constitute the system to which all entities must adhere, by law, in order to be able to sell their products in the European Union. CE marking will confirm that the finished product provides certain performance specifications for regulated requirements in relation to the intended uses.

2 Scope

FAECF Guidance Sheet

This FAECF Guidance Sheet provides an explanation to the product standard EN 14351-1 on windows and external pedestrian doorsets with more details for the manufacturer and reader of the standard. This Guidance Sheet provides guidance on how to read EN 14351-1 and shall enlighten some background details. This Guidance Sheet is not intended to be used as any kind of test method, nor for certification purposes.

Scope of EN 14351-1

The standard EN 14351-1 applies to windows, casement doors, external pedestrian doorsets, external doors onto escape routes, roof windows (including those with external fire resistance), strip windows, coupled windows [see Fig. 1] and double windows [see Fig. 2].
These windows and pedestrian doorsets may have one or more leaves, sashes or casements with openable leaves and/or fixed segments, opening inwards or outwards, manually or power operated, with or without glazing,

a glazing frame or incorporated shutters or blinds.
Examples of coupled windows and double windows are shown in Figure 1 and 2:

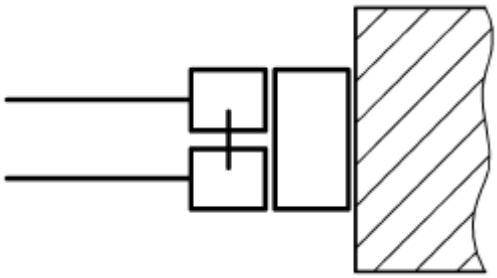

Fig. 1: coupled window

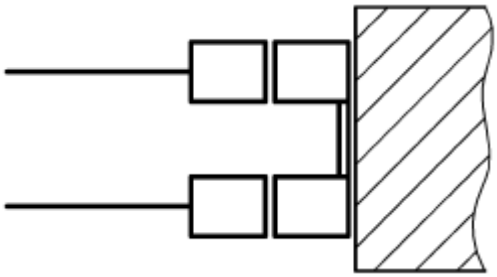

Fig. 2: double window

The standard EN 14351-1 does not apply to:

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- Windows, casement doors and external pedestrian doorsets subject to fire resistance and smoke leakage regulations [CE marking in compliance with prEN 14351-3]
- Curtain walling without structural glazing [CE marking in compliance with EN 13830]
- Curtain walling with structural glazing [CE marking in compliance with technical guide EOTA ETAG 002]
- Industrial, commercial doors and gates and garage doors [CE marking in compliance with EN 13241-1]
- Internal doors [CE marking in compliance with EN 14351-2]
- External shutters or blinds [CE marking in compliance with EN 13659]
- Roof windows in plastic
- Revolving doorsets
- Windows on escape routes

3 Distinction between windows and curtain walling

The definitions for windows (EN 12519) and curtain walling (EN 13830, see guidance sheet CE.01) are not detailed enough to make a clear distinction between the two products fixed in vertical position. The definitions are as follows:

Definitions in the standards are not detailed enough

Window (EN 12519: 2004-06):
Building component for closing an opening in a wall or pitched roof that will admit light and may provide ventilation

Curtain walling (EN 13830: 2003-11):
External building facade produced with framing made mainly of metal, timber or PVC-U, usually consisting of vertical and horizontal structural members, connected together and anchored to the supporting structure of the building, which provides, by itself or in conjunction with the building construction, all the normal functions of an external wall, but does not contribute to the load bearing characteristics of the building structure.

Three different basic styles of windows can be identified:

1. Window in a closed opening:
- Only one closed frame
- With or without cross bar
- With or without openable casement
- The loads are transmitted lateral and at the bottom direct to the building structure
- Normally fixed between walls, floor and ceiling

2. Window in a vertical opening:
- Only one closed frame
- With or without cross bar
- With or without openable casement
- The loads are fully transmitted lateral to the building structure
- Fixed between two walls
- Several windows arranged one upon the other may not have a horizontal load bearing connection and may not transfer loads between the windows

3. Window in a horizontal opening:
- Only one closed frame
- With or without cross bar
- With or without openable casement
- The appearing loads are fully transmitted at the bottom and top to the building structure
- Fixed between floor and ceiling
- Several windows arranged one beside the other may not have a vertical load bearing connection and may not transfer loads between the windows

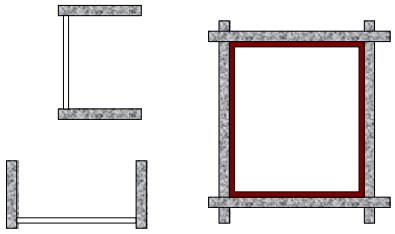

Fig. 3: Window/closed opening

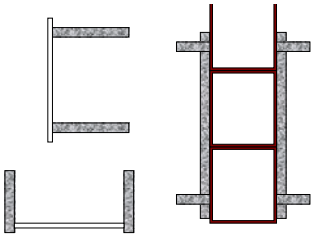

Fig. 4: Window/vertical opening

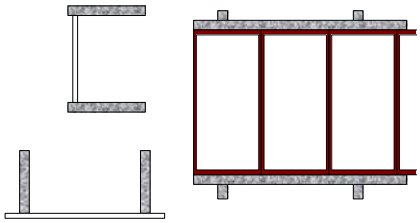

Fig. 5: Window/horizontal opening

All kinds of window-type façade-products which are not one of the three mentioned window types before shall be considered as curtain walling according to EN 13830:

Curtain walling
- Glazing which is fixed in front of floor and wall or pillars or
- Glazing with more than one framing in horizontal and vertical direction or
- Glazing with one or more load bearing connection between framings
- The glazing may include windows

Curtain walling can also be used as a window.

Style of curtain walling fixed in front of floor and wall:

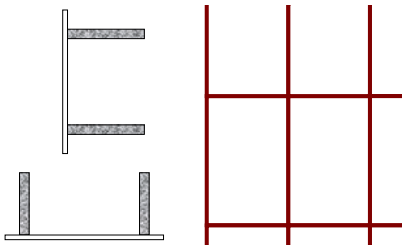

Fig. 6: Unitised construction

4 Distinction between pedestrian and industrial, commercial and garage doors

Door (EN 12519: 2004-06 for Pedestrian doors):
Building component for closing an opening in a wall that allows access and may admit light when closed

Door (EN 12433-1: 2000-02 for industrial, commercial and garage doors):
Device to close and opening which is provided for the passage of vehicles and persons

According to these definitions the difference is as follows:
Pedestrian doors are intended to be used by persons only and industrial, commercial and garage doors are intended to be used by vehicles and persons. The dimension is not relevant for distinction.

5 Construction Products Directive (CPD 89/106) and CE marking of products

Legal basis for CE marking

- The application of the CE mark implies that the construction products are suitable for intended use;
- Construction products means any product, which is produced for incorporation in a permanent manner in construction works;
- Products which enable the buildings in which they are used, provided it is adequately designed and built, to meet the six essential requirements established by the European Directive applicable to them (Construction Products Directive 89/106/EEC, also known as CPD) are deemed to be suitable for use;
- CE marking is compulsory and constitutes the system to which all manufacturers must adhere in order to be entitled to sell their products in the European Union;
- The manufacturer, or his authorised representative established in EEA [European Economic Area], is responsible for affixing CE marking on the product, on a label affixed to the product, on its packaging or on the commercial documents which accompany it.

6 Presumption of conformity and suitability for use of products

CE marking an relevance of technical specifications

- For building regulators a product is deemed to be suitable for the intended use if it has been shown to meet the essential requirements as described in the product standard;
- CE marking must be affixed to products which satisfy, chiefly, one of the following conditions:
  - Conformity with the national standards which are identical to the harmonised European Standards EN, the details of which have been published in the European Official Journal;
  - Conformity with European Technical Approvals ETAs issued on the basis of guidelines.
- Harmonised European Standards are produced by CEN (European Committee for Standardisation), whereas European Technical Approvals are issued by EOTA (European Organisation for Technical Approvals);
- The task of producing hEN and the guidelines for the issue of ETA is delegated by the European Commission to CEN or EOTA depending on the product in question.

7 Essential characteristics for windows and doors

The performance specifications which CE marked windows and pedestrian doors must comply shall be associated with essential applicable characteristics (s. Table 1).

The product standard assesses the collected number of requirements throughout the EU's Member States. Therefore, it might happen that a certain characteristic, e.g. "reaction to fire", is not required by the regulation in place of destination. In this case, manufacturers placing their products on this market are not obliged to determine or declare the performance of their products with regard to this characteristic and the option "no performance determined" (npd) in the information accompanying the CE marking may be used. The npd option may not be used, however, where the characteristic is subject to a threshold level. For an example see Fig. 8 (CE Marking).

Table 1: Essential characteristics according to EN 14351-1

Characteristic		W	D	RW	Characteristic		W	D	RW
External fire perform-ance		N	N	Y	Impact resistance		N[b]	Y[a]	Y
Reaction to fire		N[b]	N[b]	Y	Load-bearing capacity of safety devices		Y	Y	Y
Resistance to fire (E + EI)		Y	Y	Y	Height and width		N	Y	N
Smoke leakage (S)		Y	Y	N	Ability to release (locked doors in escape routes only)		N	Y	N
Self-closing (C) (self-closing fire doors only)		N	Y	N	Operating forces (only for auto-matic devices)		N	Y	N
Watertightness		Y	Y	Y	Acoustic performance		Y	Y	Y
Dangerous substances (indoor impact only)		Y	Y	N	Thermal transmittance		Y	Y	Y
Resistance to wind load		Y	Y	Y	Radiation properties		N[b]	N[b]	Y
Resistance to snow and per-manent load		N	N	Y	Air permeability		Y	Y	Y

W = Window
D = Door
RW = Roof window

Y = mandated characteristic
N = voluntary characteristic or not applicable
[a] = only for glazed doors with injury risks [b] = may change to mandated

8 Voluntary characteristics for windows and doors

In addition, European product standard EN 14351-1 indicates the following product characteristics on a voluntary basis:

- Mechanical strength
- Bullet resistance
- Explosion resistance
- Mechanical durability (Resistance to repeated opening and closing)
- Burglar resistance
- Behaviour between two different climate conditions [only for external doors]
- Door-leaf surface evenness and regularity [only for external doors]
- Ventilation [if ventilating device included]
- Safety of use [for power operated external pedestrian doorsets]

9 Doors onto escape routes and windows and doors with fire performance characteristics

Doors onto escape routes with characteristic ability to release needs a stronger involvement of the Notified Body as for other essential characteristics. It has to follow the Attestation of Conformity system 1, which is not prescribed in this guidance sheet in detail.
For windows and doors subject to resistance to fire and smoke leakage characteristics a harmonized product standard EN 14351-3 is in preparation.

10 When CE marking become obligatory for windows and doors

- CE marking of windows and doors involves a process made up of the various stages necessary for the entry into effect of standards documents;
- More specifically, after the formal vote and publication of a harmonised European Standard EN standard, the two-year coexistence period begins during which the application of CE marking to products is voluntary;
- Upon expiry of the coexistence period, CE marking becomes mandatory, i.e. only windows with CE marking are legally allowed to be placed on the market.

After coexistence period CE marking is obligatory: 1st February 2009

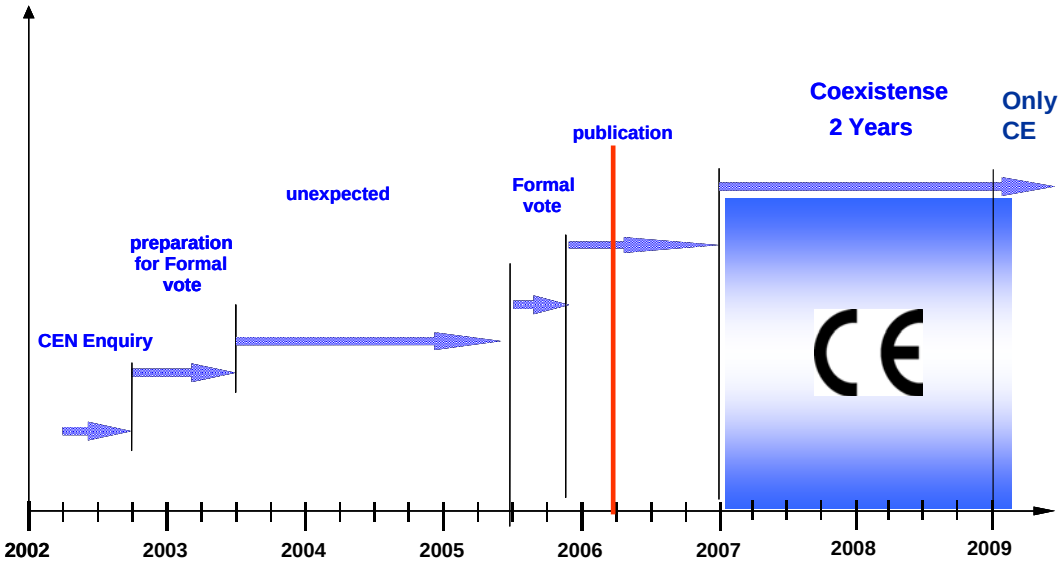

Fig. 7: Time schedule EN 14351-1 and CE marking for windows and doors

11 CE marking for windows and doors

CE marking means that each window or door must be accompanied by a document containing the following information (see Fig. 8):

- the graphic symbol of the CE marking;
- the last two digits of the year in which the CE mark was affixed;
- name or identifying mark and registered address of the manufacturer;
- product code;
- a list of the mandatory requirements with which the product complies.

Manufacturer	AnyCo Ltd, PO Box, …
Year of marking	2007
Product	Type XYZ
EN 14351-1	
Roof window intended to be used in domestic and commercial locations	

characteristics	Class
Resistance to wind load:	5B
Watertightness:	9A
Impact resistance:	300
Load-bearing capacity of safety device:	Threshold value
Acoustic performance R_W (C, C_{tr}):	npd
Thermal transmittance (U_w):	1,7 W/(m²K)
Radiation properties – Solar factor (g):	0,6
Radiation properties – Light transmittance (τ_V):	npd
Air permeability:	2

Fig. 8: Example of CE marking for windows on accompanying papers

12 How to determine performance levels

The manufacturer shall determine the performance levels to attribute to its products for all the characteristics required by CE marking for the relevant member state. The requirements and respective performance levels chosen must comply with the requirements stated within the national reference standards (e.g. the national energy efficiency standards, the national building regulations/ acts) where these exist or come into force. In particular, the npd option (no performance determined) can be used if that requirement is not subject to regulation within the members state the product is being placed.

The manufacturer is responsible and must declare

13 Initial Type Test (ITT) for determination of the performance characteristics

According to the case in question, the manufacturer needs laboratory tests and/or calculations on test specimen(s) that are representative of the product range (see Annex 2) in accordance with the requirements of European reference standards, as shown in the table below.

ITT

Table 2: Classification table of mandated characteristics for windows

Characteristic/ value/dimension Classification standard	Classification/value									
Resistance to wind load		1	2	3	4	5	E			
Test pressure P1 (Pa) according EN 12211	npd	*(400)*	*(800)*	*(1 200)*	*(1 600)*	*(2 000)*	(>2 000)			
Frame deflection according EN 12210	npd	A *(≤1/150)*		B *(≤1/200)*		C *(≤1/300)*				
Resistance to snow and permanent load (Roof windows)		Declared value								
Snow load, vertical to infill (kN/m²)	npd									
Reaction to fire (Roof windows) EN 13501-1	nbp	F	E	D	C	B	A2	A1		
External fire performance (Roof windows) EN 13501-5	npd	e.g. $B_{roof,(t1)}$								
Watertightness according EN 12208										
Non–shielded (A) Test pressure (Pa)	npd	1 A *(0)*	2 A *(50)*	3 A *(100)*	4 A *(150)*	5 A *(200)*	6 A *(250)*	7 A *(300)*	8 A *(450)*	9 A *(600)*	E *(>600)*
Shielded (B) Test pressure (Pa)	npd	1 B *(0)*	2 B *(50)*	3 B *(100)*	4 B *(150)*	5 B *(200)*	6 B *(250)*	7 B *(300)*			
Dangerous substances	npd	As required by regulations								
Impact resistance according EN 13049										
Drop height (mm)	npd	200		300		450		700		950
Load-bearing capacity of safety devices (EN 948)	npd	Threshold value								
Acoustic performance according EN ISO 140-3 and EN ISO 717-1		Declared values								
Sound insulation R_w (C,C_{tr}) (dB)	npd	≥ 25		≥ 30		≥ 35		≥ 40		≥ 45
Thermal transmittance according EN ISO 12567 or EN ISO 10077		Declared value								
U_W (W/m²K)	npd	≤ 2,9	≤ 2,1	≤ 1,7	≤ 1,4	≤ 1,2	≤ 1,0	≤ 0,8		
Radiation properties according EN 410 or 13363-1	npd	Declared value								
Solar factor g	npd									
Light transmittance τ_v	npd									
Air permeability according EN 12207	npd	1		2		3		4		
Max. test pressure (Pa)		*(150)*		*(300)*		*(600)*		*(600)*		

Table 3: Classification table of mandated characteristics for external pedestrian doorsets

Characteristic/ value/dimension Classification standard	Classification/value									
Resistance to wind load		1	2	3	4	5	E			
Test pressure P1 (Pa) according EN 12211	npd	*(400)*	*(800)*	*(1 200)*	*(1 600)*	*(2 000)*	(>2 000)			
Frame deflection according EN 12210	npd	A *(≤1/150)*		B *(≤1/200)*		C *(≤1/300)*				
Watertightness according EN 12208										
Non–shielded (A) Test pressure (Pa)	npd	1 A *(0)*	2 A *(50)*	3 A *(100)*	4 A *(150)*	5 A *(200)*	6 A *(250)*	7 A *(300)*	8 A *(450)*	9 A *(600)*	E *(>600)*
Shielded (B) Test pressure (Pa)	npd	1 B *(0)*	2 B *(50)*	3 B *(100)*	4 B *(150)*	5 B *(200)*	6 B *(250)*	7 B *(300)*			
Dangerous substances	npd	As required by regulations								
Impact resistance according EN 13049										
Drop height (mm)	npd	200	300	450	700	950				
Load-bearing capacity of safety devices (EN 948)	npd	Threshold value								
Height and width (mm) EN 12519 Clause 3.1	npd	Declared values								
Ability to release (Doors in escape routes) See EN 179, EN 1125, EN 13633 or EN 13637	npd	Approved (hardware)								
Acoustic performance according EN ISO 140-3 and EN ISO 717-1		Declared values								
Sound insulation R_w (C,C_{tr}) (dB)	npd	≥ 25	≥ 30	≥ 35	≥ 40	≥ 45				
Thermal transmittance according EN ISO 12567 or EN ISO 10077		Declared value								
U_D (W/m^{2}K)	npd	≤ 2,9	≤ 2,1	≤ 1,7	≤ 1,4	≤ 1,2	≤ 1,0	≤ 0,8		
Radiation properties according EN 410 or 13363-1	npd	Declared value								
Solar factor g	npd									
Light transmittance τ_v	npd									
Air permeability according EN 12207	npd	1	2	3	4					
Max. test pressure (Pa)		*(150)*	*(300)*	*(600)*	*(600)*					

Where the initial test report supplied to the manufacturer from the system house results from tests carried out by a Notified Body, it may be used for CE marking purposes without that the manufacturer needs involving a Notified Body to check the product (see Annex 1).

Usage of tests from system supplier

The assessment of performances [by means of laboratory tests or calculation methods, ITT], must be carried out ONCE ONLY at the beginning of the production under CE marking. The manufacturer shall, however, be required to guarantee the consistency of its production over time that the performances initially provided by the test specimen(s) are maintained, and that the traceability of the products is ensured. The above must be ensured by means of a traceable Factory production control system (FPC).

One test for Europe

Laboratory tests can be carried out anywhere in Europe at an organisation suitably notified by the individual Member States of the European Union. Notice has not yet been given of the accredited organisations in Europe. A list of notified bodies is published at NANDO at http://europa.eu.int/comm/enterprise/nando-is.

Notified Bodies

Table 4: Tasks to be performed by Notified Body and the Manufacturer (see EN 14351-1 Table ZA.3b)

Essential characteristics	**Tasks under the responsibility of the manufacturer (including sampling)**								
	Initial type testing of the product by a notified body			Initial type testing of the product by the manufacturer			FPC by the manufacturer		
	W	D	RW	W	D	RW	W	D	RW
Resistance to windload	Y	Y	N	N	N	Y	Y	Y	Y
Resistance to snow and permanent load	-	-	N	-	-	Y	-	-	Y
Reaction to fire**	-	-	Y	-	-	N	-	-	Y
External fire perform-ance	-	-	Y	-	-	N	-	-	Y
Water-tightness	Y	Y	Y	N	N	N	Y	Y	Y
Dangerous substances	Y	Y	-	N	N	-	Y	Y	-
Impact resistance	-	N	Y	-	Y (glazed doors with injury risk)	N	-	Y	Y
Load-bearing capacity of safety devices	Y	Y	Y	N	N	N	Y	Y	Y
Height	-	N	-	-	Y	-	-	Y	-
Operating forces (only for automatic devices)	-	Y	-	-	N	-	-	Y	-
Acoustic performance	Y	Y	Y	N	N	N	Y	Y	Y
Thermal transmittance	Y	Y	Y	N	N	N	Y	Y	Y
Radiation properties	-	-	N	-	-	Y	-	-	Y
Air permeability	Y	Y	Y	N	N	N	Y	Y	Y

Key
W: Windows
D: Doors
RW: Roof windows

FPC: Factory production control
Y: The indicated task(s) shall be performed on the product/characteristics in question
N: The indicated task(s) need not be performed on the product/characteristic in question
-: The indicated task(s) is not applicable for the product/characteristic in question

** Products/materials for which the reaction to fire performance is not susceptible to change during the production process

NOTE The term "Notified Body" is used only for organisations notified under article 18 of the CPD (certification bodies, inspection bodies and testing laboratories)

Minor modifications

The manufacturer is responsible and needs to decide whether to carry out subsequent type tests in the event of later modifications to the product. In general, if the essential concept characteristics of the product remain unchanged (e.g. no changes are made to the design principle of the main sections), it should not be necessary to carry out new tests.

14 Declaration of conformity and accompanying documentation

Once in possession of the Initial Type Testing results (ITT) and having implemented the Factory Production Control (FPC), the Manufacturer shall draft and supply a declaration of conformity in his language and in the language(s) of those countries on whose markets the products will be placed.

The declaration of conformity, to be drafted in the language of the country where the product will be used, shall include:

- Name and address of the Manufacturer, or his authorised representative, and the place of production;
- Description of the product (generic name, material, dimensions, use, etc)
- Information on the characteristics covered by the attestation and the subject of the accompanying documentation and/or label;
- European product standard met by the product (in this case European product standard EN 14351-1)
- Indication of the particular conditions applicable to the use of the product
- Name and address of the notified laboratory(ies) conducting the Initial Type Testing (ITT) with regard to the requirements in question;
- Name, and position held in the company, of the person empowered by the Manufacturer, or his authorised representative, to sign the Declaration of Conformity

In addition to the Declaration of Conformity, each supply of windows and external pedestrian doorsets shall be also delivered with an accompanying document that shall contain the following information:

- The CE Marking logo. Should a smaller or enlarged format be used, the proportions of the CE marking shall always remain those indicated in Fig. 9. The various elements making up the CE marking shall have substantially the same vertical dimension, and shall not be less than 5 mm.
- Name or identifying mark, and registered address of the Manufacturer;
- The last two digits of the year in which the CE marking symbol was affixed;
- Reference to the European product standard met by the product (in this case European product standard EN 14351-1);
- Description of the product and intended use (generic name, material, dimensions, etc.);
- Information on the characteristics (declared value or class or the "npd" option) considered essential by European standard EN 14351-1.

The above mentioned information, to be drafted in the language of the country where the product is to be installed, shall be affixed visibly, legibly and indelibly. Such information may either be indicated on the label to be affixed to the product (taking due care to ensure visibility even when leaves, casements or sashes are opened), or on the packaging.

The Manufacturer shall also prepared an instruction manual containing all the specific recommendations for routine maintenance, cleaning, suitable cleaning agents and any lubrication/adjustments to moving parts required, as well as the procedures for replacing component parts/finishes that become damaged or worn.

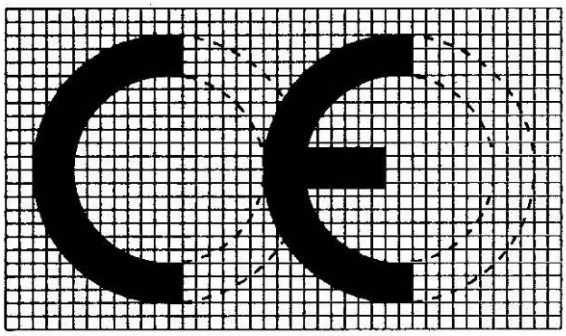

Fig. 9: Proportions to be respected when reproducing the CE mark

Annex 1: Ways to CE marking for windows, doors and curtain walling under System AoC 3 according to Guidance Paper M

CE with	Manufacturers ITT M	Shared ITT P	Cascading ITT S
Initial Type Test (ITT)		P asks for ITT NB tests P owner of ITT test report	S asks for ITT NB tests S owner of ITT test report
+	M asks for ITT NB tests M owner of ITT test report	M is allowed to use ITT of P NB checks that the product is identical M owner of ITT test report	M uses ITT of S - Agreement between M and S - Instructions for assembling and installation of S relevant for FPC of M - No reduction of performance level of product ITT of S as verification for M
Factory Production Control (FPC)	Task of M		
= CE marking	M is responsible for product declaration and performance		

Legend:

NB =	Notified Body	S =	System supplier
M =	Manufacturer	P =	Partner (e.g. second Manufacturer), industry (e.g. hardware producers) or designer

Annex 2: Selection of representative test specimen and range of application

It is the Manufacturer's responsibility to choose the test sample or specimen to undergo Initial Type Testing (ITT). In this regard, when selecting the test specimen of the window or pedestrian doorset to undergo Initial Type Testing (ITT), the Manufacturer shall determine:

- The **product type** most representative of the largest number of window and pedestrian doorset models. Annex F of European product standard EN 14351-1 provides suggestions as to the most representative (window) types to be selected (see Table 5). The Manufacturer is, however, free to select as test specimens any other window and pedestrian doorset types he considers more representative of his particular production system.

Table 5: Optional selection of representative test specimens for windows

Types of window and pedestrian doorsets to which CE marking may be extended	Representative test specimens (most unfavourable)
Fixed window Single side hung casement (opening inwards or outwards) Tilt and turn Top hung casement Bottom hung casement	Tilt and turn window
Two or more side hung casements (opening inwards or outwards)	Window with the maximum number of side hung casement all opening inwards
Horizontal single/double sliding sash(es)	Window with horizontal double sliding sashes
Horizontal single/double tilting and sliding sashes	Window with horizontal double tilting and sliding sashes
Vertical single/double sliding sash(es)	Window with vertical double sliding sashes
Vertical/horizontal pivot casement	Window with vertical or horizontal pivot casement
Louvre window with intermediate vertical/horizontal axis	Window with the maximum number of louvers with intermediate vertical or horizontal axis
Sliding folding window	Window with the maximum number of folding casements
Top or side hung reversible window	Window with top or side hung reversible casement

- The **size** should be the largest possible for the specific product category for which certification is being sought, compatible, however, with the maximum sizes of the laboratory testing machinery [maximum size: $3.80_L x 3.30_H$] and the system of profiles selected. The CE marking will be extended to all smaller size versions of the particular window and pedestrian doorset test specimen. With regard to thermal insulation, sound insulation, and behaviour between two climates, European product standard EN 14351-1 provides indications of the test specimen sizes to be submitted to laboratory testing or on which simplified performance assessment tests are to be carried out(see Table 6). The sizes indicated shall be assessed and agreed upon with the testing laboratory.
  The rules governing the extension of the test results differ with the various requirements. These rules are given in Annex E of European product standard EN 14351-1, and are summarised in this document in Table 6, Table 7 and Table 8.

- The **performance levels required** to obtain CE marking shall be extended to windows and pedestrian doorsets with higher performance than the specimen submitted for testing.

Table 6: Size of test specimen

Requirements	Sizes of test specimen suggested by European product standard EN 14351-1
Sound insulation (windows)	[1.23 m x 1.48 m] for windows undergoing laboratory performance testing according to EN 140-3
Sound insulation (doors)	[0.90 m x 2.0 m] for doors undergoing laboratory performance testing according to EN 140-3
Thermal transmittance (windows)	[1.23 m x 1.48 m] or [1.48 m x 2.18 m] if performance assessed using calculations according to EN ISO 10077-1 or EN ISO 10077-1 and EN ISO 10077-2 [1.23 (±25%) m x 1.48 (-25%) m] or [1.48 (+25%) m x 2.18 (±25%) m] if performance assessed in the laboratory according to EN 12567-1 or -2
Thermal transmittance (doors)	[1.23 m x 2.18 m] or [2.00 m x 2.18 m] if performance assessed using calculations according to EN ISO 10077-1 or EN ISO 10077-1 and EN ISO 10077-2 [1.23 (±25%) m x 2.18 (±25%) m] or [2.00 (±25%) m x 2.18 (±25%) m] if performance assessed in the laboratory according to EN 12567-1
Behaviour between different climates (windows)	[1.23 (±25%) m x 1.48 (-25%) m]
Behaviour between different climates (doors)	[1.23 (±25%) m x 2.18 (±25%) m]

The range of application is listed in the following tables:

Table 7: Range of direct application for windows

Requirements	**Extension of performance results obtained on window test specimen**
Resistance to wind load	To all windows with smaller frame width and height than the window test specimen
Resistance to snow **Behaviour in the event of external fire** **Load-bearing capacity of safety devices** **Operating forces** **Mechanical strength** **Resistance to repeated opening and closing**	To all windows with the same or smaller surface area than the window test specimen
Watertightness **Air permeability**	To all windows with the same or smaller surface area than the window test specimen, and to those windows with up to 50% greater surface area than the test specimen
Radiation properties (of the glazing infill) **Behaviour between different climates**	To all windows both larger and smaller than the test specimen
Bullet resistance **Explosion resistance**	To be defined with the testing laboratory
Ventilation	To all windows of any size, either larger or smaller than the test specimen, provided the ventilation devices are of the same size, and have the same characteristics as the test specimen
Impact resistance	To all windows with the same or larger surface area than the window test specimen
Burglar resistance	The same extension rules apply as indicated in EN 1627
Sound insulation [laboratory performance assessment according to method described in EN 140-3 or according to the simplified method described in European product standard EN 14351-1] ****	
Assessment on test specimen with a surface area of 2.7 m²	To all windows with the same or smaller surface area compared to the window specimen submitted, and to all windows with up to 50% greater surface area than the window specimen ****
Assessment on test specimen with surface area A of more than 2.7 m² and less or equal to 3.6 m² [2.7 m² < A ≤ 3.6 m²]	To all windows with the same or smaller surface area compared to the window specimen submitted, and to all windows of up to *double* the surface area of the window specimen ****
Assessment of test specimen with surface area A of more than 3.6 m² and less or equal to 4.6 m² [3.6 m² < A ≤ 4.6 m²]	To all windows with the same or smaller surface area compared to the window specimen submitted, and to all windows with up to 150% greater surface area than the window specimen ****
Assessment of test specimen with a surface area in excess of 4.6 m²	To windows of any size, larger or smaller than the test specimen ****
Thermal insulation [performance assessment either according to the simplified method under the provisions of EN 10077-1, or with finite element calculation according to EN 10077-2, or with laboratory test according to the method described in EN 12567-1]	
Assessment on specimen sized: [1.23 m x 1.48 m] or [1.23 (±25%) m x 1.48 (-25%) m]	To all windows with a surface area smaller or equal to 2.3 m²
Assessment on specimen sized: [1.23 m x 1.48 m] or [1.23 (±25%) m x 1.48 (-25%) m] with glazing having U_g transmittance values of less than 1.9 W/(m²K)	To all windows with a smaller or larger surface area than the test specimen
Assessment on specimen sized: [1.48 m x 2.18 m] or [1.48 (+25%) m x 2.18 (±25%) m]	To all windows with a surface area larger than 2.3 m
****: The extension rules of the results of the sound insulation performance testing given above are FAECF's interpretation of Table B.3 contained in Annex B of product standard EN 14351-1. This table is currently still under discussion by the CEN working group charged with developing European product standard EN 14351-1. Table B.3 also gives the corrective values to be applied to the performance results as a function of the specimen size under consideration	

Table 8: Range of direct application for doors

Requirements	**Extension of performance results obtained on door test specimen**
Resistance to wind load	To all casement doors and external pedestrian doorsets with smaller frame width and height than the door test specimen
Load-bearing capacity of safety devices **Operating forces** **Mechanical strength** **Resistance to repeated opening and closing**	To all casement doors and external pedestrian doorsets with smaller surface area than the door test specimen
Watertightness **Air permeability** **Sound insulation (only laboratory test with minimum specimen sized 900x2000)**	To all casement doors and external pedestrian doorsets with smaller surface area than the door test specimen, and to those with up to 50% greater surface area than the test specimen
Radiation properties (of infill) **Behaviour between different climates**	To all casement doors and external pedestrian doorsets, either larger or smaller than the test specimen
Bullet resistance **Explosion resistance**	To be defined with the testing laboratory
Ventilation	To all casements doors and external pedestrian doorsets of any size, either larger or smaller than the test specimen, provided the ventilation devices are of the same size, and have the same characteristics as the test specimen
Impact resistance	To all casement doors and external pedestrian doorsets with the same or larger surface area than the door specimen.
Burglar resistance	The same extension rules apply as indicated in EN 1627
Thermal insulation [performance assessment either according to simplified method indicated in EN 10077-1 or with finite element analysis in compliance with EN 10077-2 or with laboratory test according to method described by EN 12567-1]	
Assessment on test specimen sized: [1.23 m x 2.18 m] or [1.23 (±25%) m x 2.18 (±25%) m]	To all casement doors and external pedestrian doorsets with a surface area smaller or equal to 3.6 m^2
Assessment on test specimen sized: [2.00 m x 2.18 m] or [2.00 (±25%) m x 2.18 (±25%) m]	To all casement doors and external pedestrian doorsets with a surface area larger than 3.6 m^2
Sound insulation [laboratory performance assessment according to method described by EN 140-3]	
Casement doors/external pedestrian doorsets with seals on four sides	To all casement doors and external pedestrian doorsets with smaller surface area than the test specimen and to those with up to 50% larger surface area than the surface area of the test specimen
Casement doors/external pedestrian doorsets with seals on three sides	To all casement doors and external pedestrian doorsets with surface area smaller or equal to that of the test specimen

Annex 3: Bibliography

[1] EN 14351-1: 2006-03 Windows and doors - Product standard, performance characteristics - Part 1: Windows and external pedestrian doorsets without resistance to fire and/or smoke leakage characteristics
[2] EN 13830: 2003 Curtain Walling – Product Standard
[3] CE.01: 2004-11 "CE marking of curtain walling", FAECF Guidance Sheet

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